

### REMARKS

Reconsideration of this application is respectfully requested.

In the Office Action, claims 1-3, 5-7, 9-14, 16-18, and 20-27 were pending and rejected. In this response, no claim has been amended and no new subject matter has been added.

#### ***Rejections under 35 U.S.C. § 103***

Claims 1-3, 12-14, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Publication No. U.S. 2004/0100979 of Mandin et al. (hereinafter “Mandin”) in view of U.S. Publication No. U.S. 2002/0114277 of Kyusojin (hereinafter “Kyusojin”). Applicants would like to traverse this rejection in view of the remarks that follows.

Claim 1, recites:

1. A method, comprising:  
**determining, by a device that shares an upstream channel with other devices, whether based, at least in part on particular data, an upstream channel data transfer rate can be improved over a current data transfer rate of a current upstream channel from the device to a remote system; and**  
improving by the device, if the upstream channel data transfer rate can be improved, the upstream channel data transfer rate based, at least in part, on the particular data,  
**wherein the particular data comprise the device's transmit queue capacity data, upstream channel bandwidth data transmitted from the remote system, or both. (emphasis added)**

Applicants respectfully submit that claim 1 requires determining whether an upstream channel transfer rate can be improved based at least in part on particular data, “**wherein the particular data comprise the device's transmit queue capacity data, upstream channel bandwidth data transmitted from the remote system, or both**”. Mandin and Kyusojin fail to disclose at least this limitation.

The Office Action admits that Mandin does not explicitly teach the particular data comprise **the device's transmit queue capacity data, upstream channel bandwidth data transmitted from the remote system, or both.**

The Office Action alleges that Kyusojin discloses the limitation. Applicants respectfully disagree. Kyusojin describes scheduling transmission requests from multiple flows created internally to avoid simultaneous transmission requests of two or more flows from occurring (Kyusojin , Paragraph 0002). Kyusojin shows multiple queues storing bandwidth-guaranteed flow packet data or best-effort flow packet data (Kyusojin, paragraph 0053). Kyusojin maintains the reserved bandwidth for each flow so as to avoid collision of transmission requests from the flows (Kyusojin, Paragraph 0009). Kyusojin in paragraph 0094 describes that scheduling processing is sequentially performed for all queues appropriated to bandwidth-guaranteed flows and best-effort flows. Bandwidth-guaranteed flow packet data transfer is performed with priority, and only in the event that a bandwidth-guaranteed queue is empty. This is to prevent best-effort flow packet data transfers from affecting bandwidth-guaranteed flow packet data transfers. There is no mention of **“the device's transmit queue capacity data”** or **“upstream channel bandwidth data transmitted from the remote system”** in Kyusojin. Therefore, Kyusojin fails to disclose **“the device's transmit queue capacity data, upstream channel bandwidth data transmitted from the remote system, or both”**.

Applicants submit that Mandin and Kyusojin fail to disclose claim 1, and respectfully request that the Examiner withdraw this rejection. Claims 2 and 3, which depend on claim 1, are believed to be patentable for at least the reasons discussed in support of their base claim. Applicants respectfully request that the rejections of these claims be withdrawn as well.

Regarding claims 12, 23, and 26, the claims include substantially the same limitation. Applicants submit that Mandin and Kyusojin fail to disclose determining whether an upstream channel transfer rate can be improved based at least in part on particular data, **“wherein the particular data comprises the device’s transmit queue capacity data or upstream channel bandwidth data transmitted from the remote system”**. The detailed remarks with respect to independent claim 1 are incorporated herein by reference. Therefore, applicants believe that the claims are allowable and respectfully request the rejections for these claims to be withdrawn. Claims 13, 14, 24, 25, and 27 depend directly or indirectly on claim 12, 23, and 26 and are believed to be patentable for at least the reasons discussed in support of that base claims. Applicants respectfully request that these rejections be withdrawn as well.

Claims 5-7 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandin in view of Kyusojin and further in view of U.S. Publication No. 2003/0058795 A1 of Lansing et al. (hereinafter “Lansing”).

Without conceding the appropriateness of the combination, Applicants respectfully submit that Mandin, Kyusojin, and Lansing fail to disclose “the device’s transmit queue capacity data” in claim 1 and “wherein the device comprises a cable modem” as recited in claim 2. Claims 5-7 indirectly depend on claim 1 and claim 2.

Mandin and Kyusojin fail to disclose teaching in independent claim 1 as explained in the foregoing section. The detailed remarks with respect to independent claim 1 are incorporated herein by reference. The Office Action alleges that Lansing discloses the transmit queue capacity data. Applicants respectfully disagree. Lansing discloses an SDRAM in a CMTS storing priority queues, and some registers (Lansing, 0026-0027, figure 1). The local SDRAM is a fixed shared memory space (Lansing 0043). CMTS drops lower priority packets if the SDRAM is getting full (Lansing, 0033 and 0039). Lansing does not disclose

“the device’s transmit queue capacity data” and “wherein the device comprises a cable modem” as recited in claims 1-2. Lansing discloses a priority queue in CMTS but not in the cable modem. Lansing drops packet in order to free up space in the fixed shared memory space, which is not “increasing the capacity of the transmit queue” as recited in claim 6 or “initiating a service flow” as required in claim 7. For the foregoing reasons, Applicants respectfully submit that claims 5-7 are believed to be patentable. Applicants respectfully request that the rejections for the claims be withdrawn.

Claims 16-18 that depend from claims 12 and 13 were rejected by the same reason as stated in the Office Action. For at least the same remarks with respect to claims 6-8, Applicants submit that claim 16-18 are allowable and Applicants respectfully request that the rejections for the claims be withdrawn.

Claims 9-11 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandin in view of Kyusojin and further in view of U.S. Patent No. 6236678 B1 of Horton et al. (hereinafter “Horton”).

Without conceding the appropriateness of the combination, Applicants respectfully submit that Mandin, Kyusojin, and Horton fail to disclose “the device’s transmit queue capacity data” and “wherein the device comprises a cable modem” as recited in claims 1-2 from which claims 9-11 indirectly depend. Mandin and Kyusojin fail to disclose teaching in independent claim 1 as explained in the foregoing section. The detailed remarks with respect to independent claim 1 are incorporated herein by reference. Claim 10 further claims “calculating an available bandwidth of each upstream channel based, at least in part, on the UCD message and the MAP message” and “determining whether a different upstream channel has more bandwidth than the current upstream channel.” Claim 11 further includes “switching to the different upstream channel, if the different upstream channel has more available

bandwidth than the current upstream channel.” Horton discloses lookup tables to determine physical length (PHY L) which is part of the content of UCD. Horton also describes an exemplary cable modem system where a downstream processor receives, among other things, UCD and MCP from a CMTS (Horton, col. 5, line 50-54, and Figure 3). The references fail to disclose the limitations such as: “calculating an available bandwidth of each upstream channel based, at least in part, on the UCD message and the MAP message”, “determining whether a different upstream channel has more bandwidth than the current upstream channel”, and “switching to the different upstream channel, if the different upstream channel has more available bandwidth than the current upstream channel”. For the foregoing reasons, Applicants respectfully submit that claims 9-11 are allowable. Applicants respectfully request that the rejections for the claims be withdrawn.

Claims 20-22 depending from amended claim 12 were rejected by the same reason as stated in the Office Action. For at least the same remarks with respect to claims 9-11, Applicants submit that claim 20-22 are allowable and Applicants respectfully request that the rejections for the claims be withdrawn.

## CONCLUSION

In view of the foregoing, Applicants respectfully submit the present application is now in condition for allowance. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call the undersigned attorney at (408) 720-8300.

Please charge Deposit Account No. 02-2666 for any shortage of fees in connection with this response.

Respectfully submitted,

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Date: 7/21/08

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